

Figure S1. Alignment between putative p53 binding site and p53 binding motifs. The sequence logo from JASPAR database is compared to the predicted *INKA2/Inka2* binding sites, and to a refined consensus p53 binding motif (p53PET) with high prediction accuracy (18). *INKA2*, inka box actin regulator.

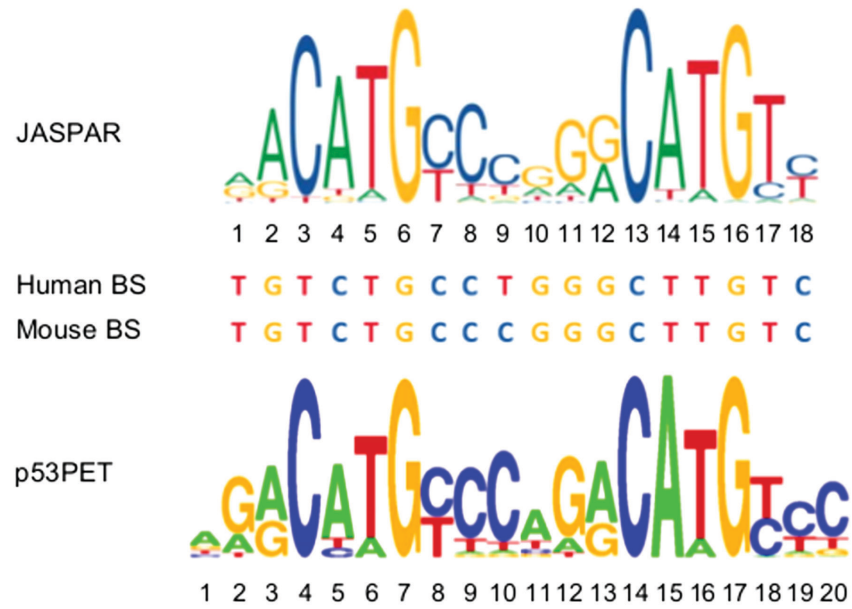


Figure S2. Complete screening data of *Inka2/INKA2*. (A) Fold induction of the 6 candidate genes in HCT116 (left panel) or MCF10A (right panel) cells. The y-axis represents the relative fold of the median expression of ADR treated group to the maximum expression among non-treated group, as described in the screening method. (B) Fold induction of *Inka2* expression in twenty-four mouse tissues. The y-axis represents the relative fold of the WX median expression to the maximum median expression among W, K and KX, as described in the screening method. (C) Levels of *Inka2* mRNA in tissues not satisfying the screening criteria. RNA-seq was performed on tissues from untreated *p53* wild-type (W) or knockout (K) mice, or on those dissected 24 h after irradiation with 10 Gy of X-rays (WX and KX). The expression levels are represented in fragment per kilobase million (FPKM). P-values were calculated between WX group and the group with a maximum median expression among W, K or KX by one-way ANOVA with Dunnett's post hoc test; *P<0.05, **P<0.01 and ***P<0.001. NS, not statistically significant. *INKA2*, inka box actin regulator.

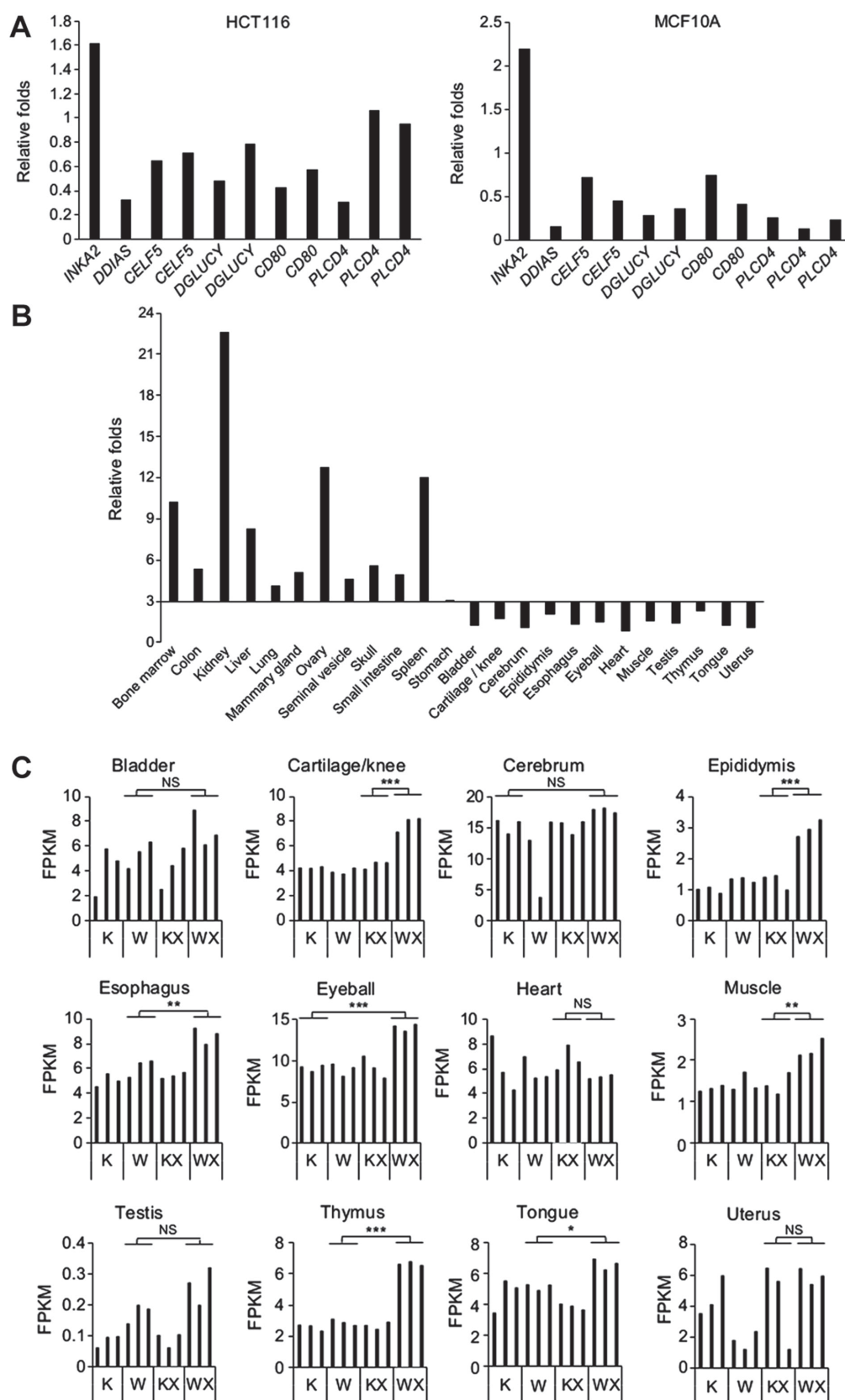


Figure S3. *INKA2* isoform 2 exhibits a low expression. Relative mRNA expression of (A) both isoform 1 and isoform 2 of *INKA2* or (B) isoform 2 only in U2OS cells normalised to GAPDH. The expression of the untreated sample (siRNA-, ADR-) in isoform 2 is considered 1. Cells were treated with or without an siRNA targeting either EGFP or p53 and treated with or without 2 h of 2 μ g/ml ADR. Error bars are the means \pm SD, n=2. *INKA2*, inka box actin regulator.

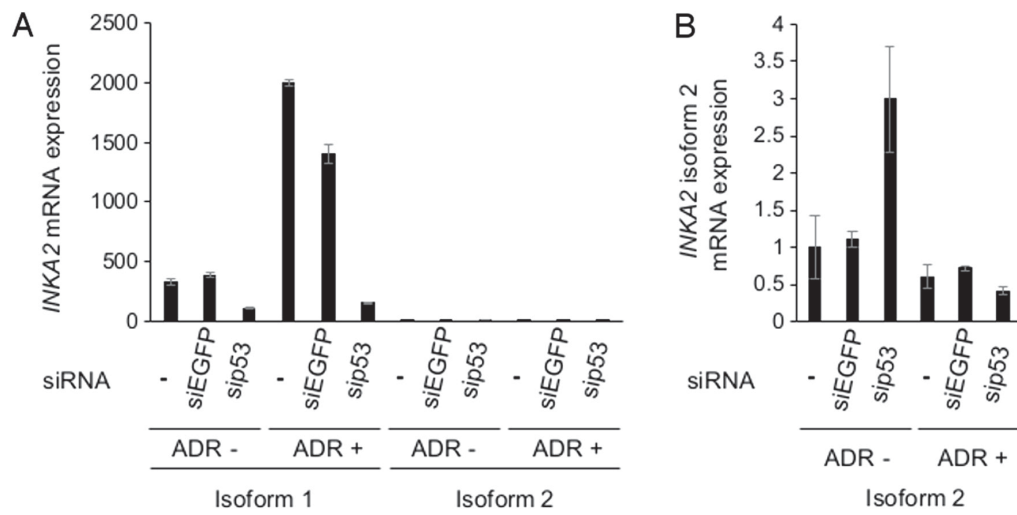


Figure S4. University of California Santa Cruz, California, United States (UCSC) Genome Browser view of TP53 or Trp53 ChIP-seq peaks obtained from (A) the ReMap 2018 database and (B) the ChIPBase database. The *INKA2* (*FAM212B*)/*Inka2* (*Fam212b*) gene is shown beneath the peaks, followed by promoter regions. (A) Human data are integrated with ENCODE data showing H3K4Me1, H3K4Me3 and H3K27Ac histone modification marks from 7 cell types. CpG island tracking information from UCSC is added at the bottom for both species. *INKA2*, inka box actin regulator.

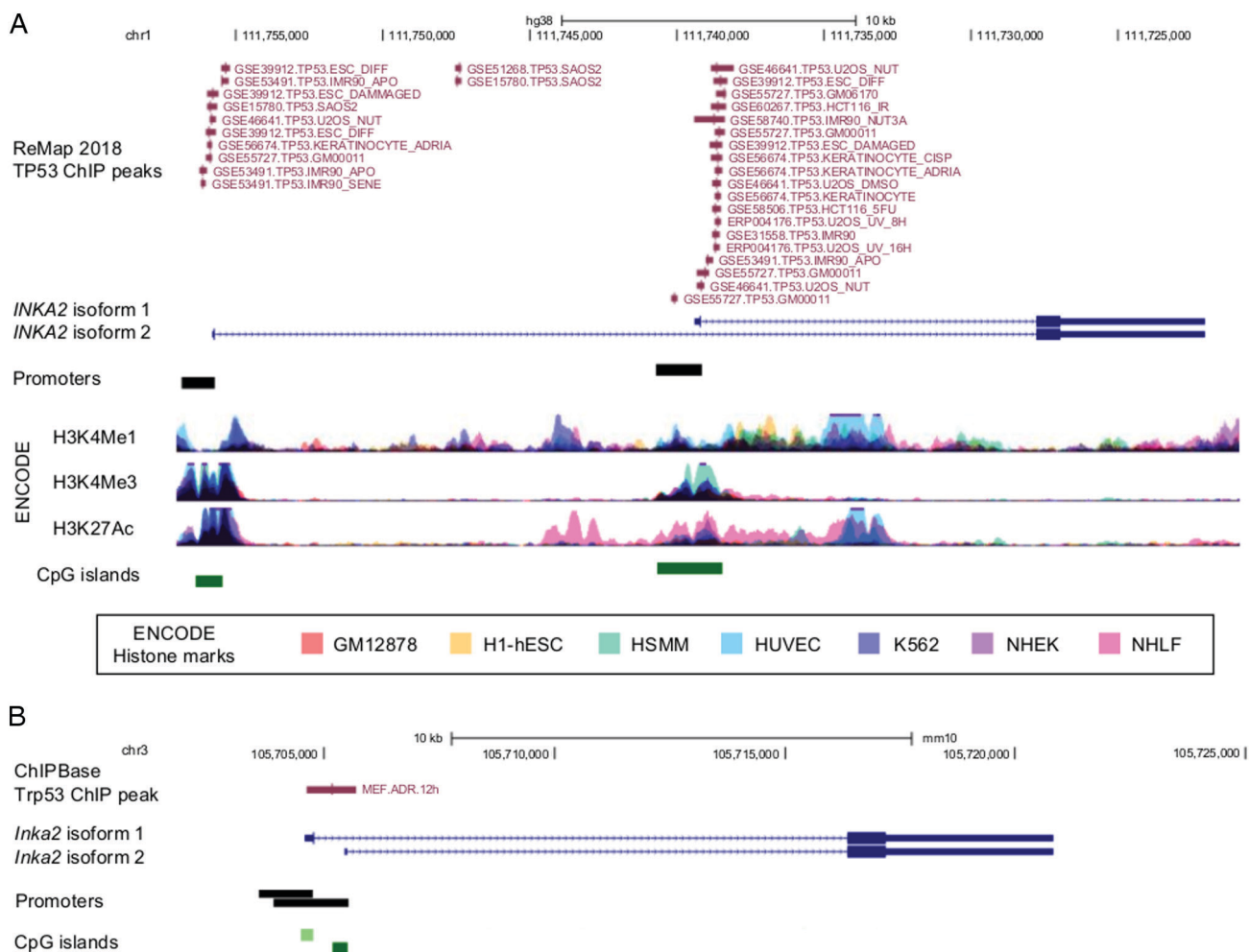


Table SI. Oligonucleotide sequences and primers.

siRNA oligonucleotides	Sense	Antisense
siEGFP	GCAGCACGACUUCUUCAAGT	CUUGAAGAAGUCGUGCUGC
sip53	GACUCCAGUGGUAUAUCUACTT	GUAGAUUACCACUGGAGUCTT
siINKA2-1	GCACUCACCCUCAGGAUUUTT	AAAUCCUGAGGGUGAGUGCTT
siINKA2-2	GGGUGAUGGCUUACAGGAUTT	AUCCUGUAAGCCAUCACCCTT
Primers	Forward	Reverse
INKA2 isoform1 (RT-qPCR)	CTATCTCCGTCGCCTCAAAC	TCATCTGATCCTGTAAGCCATC
INKA2 isoform2 (RT-qPCR)	GGAGAGGAAAGATGAGGCAAC	TCATCTGATCCTGTAAGCCATC
GAPDH (RT- qPCR)	ACCATGGGGAAGGTGAAG	AATGAAGGGGTCATTGATGG

INKA2 human p53 BS	AAAGATACTCTGCGGGGGCAGGCTT	AAAAAGCTTCAAGCCCAGACCTGACATCT
INKA2 mouse p53 BS	AAAGATACTCTGCGGGGGCAGGCTT	AAAAAGCTTCCTCCTCCCCGTCATTA
INKA2 expressing	AAAGAATTCTCCATTATGACGATGGAGAGCAG	AAACTCGAGTCAGACCCAAACAGCTGTGTTA
PAK4 expressing	AAAGAATTCTCCATTATGTTGGGAAGAGGAAG	AAACTCGAGTCTGGTGCGGTTCTGGC

INKA2, inka box actin regulator; PAK4, p21 (RAC1) activated kinase.

Table SII. Primary antibodies used for immunoblotting and immunocytochemistry.

Target protein	Animal source, type	Cat. no.	Use	Working dilution	Vendor
INKA2/FAM212B	Rabbit, polyclonal	HPA027809	IB, ICC	1:100, 1:50	Atlas Antibodies, Stockholm, Sweden
p53	Mouse, monoclonal	OP03	IB	1:1,000	Calbiochem, La Jolla, CA, USA
p21	Mouse, monoclonal	OP64	IB	1:500	Calbiochem, La Jolla, CA, USA
HA	Rat, monoclonal	11867423001	IB	1:2,000	Roche Applied Science, Basel, Switzerland
FLAG	Rabbit, polyclonal	F7425	IB	1:400	Sigma-Aldrich, St. Louis, MO, USA
PAK4	Rabbit, polyclonal	#3242	IB	1:1,000	Cell Signaling Technology, Danvers, MA, USA
β -catenin	Rabbit, monoclonal	sc-7963	IB, ICC	1:200, 1:50	Santa Cruz Biotechnology, Inc., Santa Cruz, CA, USA
β -actin	Mouse, monoclonal	A1978	IB	1:5,000	Sigma-Aldrich, St. Louis, MO, USA
Anti-rabbit IgG-HRP	Goat, horseradish peroxidase conjugated	sc-2004	IB	1:50,000	Santa Cruz Biotechnology, Inc., Santa Cruz, CA, USA
Anti-rabbit IgG-HRP	Mouse, horseradish peroxidase conjugated	sc-2357	IB	1:50,000	Santa Cruz Biotechnology, Inc., Santa Cruz, CA, USA
Anti-mouse IgG-	Goat, horseradish	sc-2005	IB	1:50,000	Santa Cruz Biotechnology, Inc.,

HRP	peroxidase conjugated				Santa Cruz, CA, USA
Anti-rat IgG-HRP	Goat, horseradish peroxidase conjugated	sc-2006	IB	1:50,000	Santa Cruz Biotechnology, Inc., Santa Cruz, CA, USA

Table SIII. Binding scores obtained from JASPAR database.

Gene	Predicted binding site	Score
<i>INKA2</i>	TGTCTGCCTGGGCTTGTC	9.21
<i>Inka2</i>	TGTCTGCCCGGGCTTGTC	10.85
<i>p21</i> (<i>CDKN1A</i>)	AACATGTCCCAACATGTT	22.15
<i>p21 (Cdkn1a)</i>	AACATGTCTTGACATGTT	23.33

Table SIV. TCGA samples.

Cancer type	Control samples	Tumour samples	Tumour <i>p53</i> wild-type samples	Tumour <i>p53</i> mutant samples
BLCA	19	408	344	64
BRCA	112	1093	795	298
CESC	3	304	295	9
CHOL	9	35	30	5
COAD/READ	51	379	375	4
GBM/LGG	0	669	478	191
HNSC	44	520	306	214
KIPAN	129	889	857	32
LAML	0	173	161	12
LIHC	50	371	311	60
LUAD	59	515	429	86
LUSC	51	501	360	141
OV	3	541	282	259
PAAD	4	178	124	54
PCPG	3	179	178	1
PRAD	52	497	473	24
SKCM	1	103	97	6
STAD	33	238	164	74
THCA	59	501	498	3

UCEC	11	370	302	68
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BLCA, bladder urothelial carcinoma; BRCA, breast invasive carcinoma; CESC, cervical and endocervical cancers; CHOL, cholangiocarcinoma; COAD/READ, colorectal adenocarcinoma; GBM/LGG, glioma; HNSC, head and neck squamous cell carcinoma; KIPAN, pan-kidney cohort; LAML, acute myeloid leukaemia; LIHC, liver hepatocellular carcinoma; LUAD, lung adenocarcinoma; LUSC, lung squamous cell carcinoma; OV, ovarian serous cystadenocarcinoma; PAAD, pancreatic adenocarcinoma; PCPG, pheochromocytoma and paraganglioma; PRAD, prostate adenocarcinoma; STAD, stomach adenocarcinoma; THCA, thyroid carcinoma; UCEC, uterine corpus endometrial carcinoma.

Table SV. Median mRNA expression in 24 mouse tissues of the 22 candidate genes obtained from mouse transcriptome screening.

Organ	Group	<i>Fam212b</i>	<i>4632434I11Rik</i>	<i>Celf5</i>	<i>9030617O03Rik</i>	<i>Cd80</i>	<i>Sesn2</i>	<i>Zfp365</i>	<i>1700007K13Rik</i>
Thymus	K	2.67	3.30	0.37	1.66	3.59	4.09	0.47	0.49
	W	2.88	3.75	0.34	2.90	3.25	4.09	0.72	0.28
	KX	2.69	3.34	0.45	1.98	3.54	5.16	0.76	0.69
	WX	6.64	4.84	1.06	19.55	17.69	23.50	3.43	7.52
Heart	K	5.73	0.11	0.01	13.08	0.20	1.02	0.17	0.00
	W	5.38	0.07	0.06	15.95	0.26	1.06	0.28	0.00
	KX	6.55	0.15	0.04	16.57	0.32	0.80	0.23	0.00
	WX	5.36	0.82	0.74	24.74	1.19	4.65	1.58	0.30
Lung	K	3.73	0.41	0.09	2.84	0.96	10.18	3.29	11.64
	W	4.57	0.38	0.09	3.95	0.74	8.44	4.38	11.31
	KX	3.69	0.36	0.07	2.92	0.76	8.38	3.76	14.39
	WX	18.88	2.56	2.32	17.20	1.41	24.65	11.12	20.37
Kidney	K	0.09	0.14	0.02	23.89	0.02	10.81	0.03	0.34
	W	0.11	0.21	0.01	47.41	0.02	8.48	0.04	0.30
	KX	0.11	0.14	0.00	29.79	0.00	8.26	0.01	0.33
	WX	2.49	1.35	0.15	86.53	0.05	13.93	0.37	3.21
Spleen	K	0.45	3.15	0.02	3.15	4.25	5.84	0.31	0.00
	W	0.81	1.62	0.08	5.90	4.91	6.46	0.46	0.00

	KX	0.43	1.72	0.05	3.78	5.37	5.20	0.48	0.00
	WX	9.64	4.44	1.32	19.30	21.72	26.69	2.02	0.84

Organ	Group	<i>Bbc3</i>	<i>Psrc1</i>	<i>Ccng1</i>	<i>Phlda3</i>	<i>Gdf15</i>	<i>Cdkn1a</i>	<i>Eda2r</i>	<i>A930001C03Rik</i>	<i>Gm16197</i>	<i>Ces2e</i>
Thymus	K	4.98	5.87	22.62	5.98	0.39	4.47	0.05	0.12	0.06	0.76
	W	6.65	7.47	29.37	8.76	0.63	7.42	0.17	0.10	0.10	0.79
	KX	8.77	9.33	25.01	9.28	1.79	6.96	0.04	0.06	0.34	0.73
	WX	22.45	22.77	128.04	122.80	27.75	271.52	2.98	1.80	0.59	6.17
Heart	K	0.78	0.17	153.75	3.74	0.30	2.82	0.48	0.00	0.03	0.44
	W	0.77	0.23	164.90	5.93	0.39	7.82	0.73	0.04	0.06	0.62
	KX	0.73	0.20	146.51	3.48	0.46	9.79	0.18	0.00	0.01	0.34
	WX	2.43	0.63	202.67	19.38	3.78	59.67	4.36	0.09	0.19	5.10
Lung	K	4.79	0.23	20.14	14.23	1.01	10.76	0.15	0.07	0.05	1.58
	W	4.86	0.88	26.52	21.26	1.32	24.53	0.69	0.19	0.17	2.88
	KX	4.55	0.63	19.71	15.92	0.74	26.55	0.12	0.00	0.04	1.62
	WX	14.26	5.28	113.80	96.53	32.12	351.15	13.46	1.08	1.17	29.26
Kidney	K	0.37	0.28	23.71	1.30	1.72	0.86	0.00	0.37	0.01	4.10
	W	0.58	0.21	50.25	1.43	2.71	1.70	0.12	0.63	0.01	7.04
	KX	0.51	0.20	24.20	1.47	2.00	1.74	0.00	0.45	0.00	5.10
	WX	1.54	1.18	196.52	18.75	17.57	37.76	1.44	1.59	0.18	21.12
Spleen	K	4.55	3.48	19.79	2.46	0.78	2.02	0.02	0.00	0.03	0.18

	W	4.54	2.47	28.58	4.39	1.31	4.43	0.21	0.04	0.11	0.18
	KX	3.29	3.20	23.13	2.89	0.83	2.91	0.02	0.00	0.00	0.21
	WX	17.43	23.55	140.11	74.08	27.38	209.59	6.44	0.32	1.40	5.05

Organ	Group	<i>D630023F18Rik</i>	<i>Lif</i>	<i>Mgmt</i>	<i>Plcd4</i>
Thymus	K	0.11	0.23	4.73	0.08
	W	0.27	0.28	4.59	0.23
	KX	0.11	0.28	4.01	0.24
	WX	4.15	1.96	18.89	1.67
Heart	K	0.00	0.08	4.61	0.03
	W	0.00	0.05	5.66	0.04
	KX	0.00	0.08	4.88	0.01
	WX	0.03	0.22	7.22	0.03
Lung	K	0.00	0.73	2.04	0.18
	W	0.00	0.88	2.89	0.18
	KX	0.00	0.62	1.77	0.50
	WX	0.05	2.86	9.26	1.10
Kidney	K	11.57	0.05	3.13	0.45
	W	17.14	0.09	5.96	0.51
	KX	16.35	0.04	2.58	0.41
	WX	24.10	0.20	14.17	3.86

Spleen	K	0.01	0.28	3.39	0.04
	W	0.00	0.37	4.22	0.04
	KX	0.00	0.27	2.77	0.03
	WX	1.31	1.47	22.12	0.05

Organ	Group	<i>Fam212b</i>	<i>4632434I11Rik</i>	<i>Celf5</i>	<i>9030617O03Rik</i>	<i>Cd80</i>	<i>Sesn2</i>	<i>Zfp365</i>	<i>1700007K13Rik</i>
Liver	K	0.02	0.09	0.00	8.57	0.18	2.17	0.00	0.00
	W	0.04	0.10	0.00	10.94	0.12	1.72	0.01	0.00
	KX	0.03	0.09	0.02	9.20	0.11	1.86	0.01	0.06
	WX	0.32	0.92	0.05	19.25	0.09	4.69	0.09	0.55
Bladder	K	4.83	0.21	0.05	5.70	0.85	4.49	0.22	1.07
	W	5.57	0.36	0.13	7.86	0.97	7.85	0.48	1.32
	KX	4.46	0.26	0.08	5.92	0.85	5.29	0.26	0.89
	WX	6.90	1.97	0.58	16.37	2.06	12.88	1.35	3.35
Esophagus	K	5.01	0.32	0.41	5.94	0.88	4.68	1.12	0.66
	W	6.48	0.36	0.41	7.13	0.72	4.55	1.21	0.87
	KX	5.42	0.61	0.38	7.17	1.03	4.01	1.13	0.72
	WX	8.83	1.75	1.31	12.80	3.69	8.57	2.86	3.03
Stomach	K	1.79	0.33	0.31	6.22	0.93	3.58	0.34	0.31
	W	2.09	0.52	0.41	7.60	0.78	3.50	0.36	0.37
	KX	2.12	0.48	0.52	6.54	0.68	3.13	0.44	0.40

	WX	6.43	2.43	0.84	22.57	2.45	8.33	1.32	2.33
Colon	K	1.39	0.69	2.00	5.04	0.20	3.31	0.32	0.05
	W	1.44	0.88	2.25	7.31	0.21	4.10	0.61	0.10
	KX	1.45	0.96	1.94	5.08	0.29	3.65	0.38	0.10
	WX	7.76	4.02	1.84	29.49	0.95	14.52	1.72	4.28

Organ	Group	<i>Bbc3</i>	<i>Psrc1</i>	<i>Ccng1</i>	<i>Phlda3</i>	<i>Gdf15</i>	<i>Cdkn1a</i>	<i>Eda2r</i>	<i>A930001C03Rik</i>	<i>Gm16197</i>	<i>Ces2e</i>
Liver	K	0.93	0.02	5.10	0.23	3.38	0.77	0.00	0.44	0.00	34.05
	W	1.12	0.02	7.34	0.44	2.32	0.67	0.05	0.30	0.00	104.16
	KX	1.15	0.02	5.60	0.37	2.79	0.42	0.01	0.22	0.00	41.31
	WX	1.49	0.27	26.97	4.92	16.37	33.43	1.51	1.12	0.08	109.47
Bladder	K	1.27	0.24	23.09	34.29	0.70	7.89	0.24	0.21	0.03	2.55
	W	1.57	1.06	41.92	40.57	0.60	23.36	0.85	0.36	0.25	2.95
	KX	1.17	0.36	24.24	35.45	0.42	14.36	0.13	0.18	0.01	2.10
	WX	3.10	2.41	110.04	71.51	6.85	146.13	4.05	1.61	0.42	8.33
Esophagus	K	0.88	1.95	91.68	75.35	0.17	155.63	1.96	0.25	0.06	7.19
	W	0.91	2.02	99.88	72.67	0.14	151.91	2.06	0.26	0.10	6.51
	KX	0.88	2.43	94.42	66.31	0.04	141.44	1.47	0.21	0.08	7.45
	WX	2.47	4.92	138.43	101.14	0.94	247.03	4.70	0.74	0.23	14.62
Stomach	K	0.76	0.58	25.79	10.82	0.20	69.86	0.13	0.24	0.05	3.66
	W	0.82	0.78	29.88	10.41	0.24	74.09	0.24	0.45	0.07	3.76

	KX	0.68	0.44	26.80	11.87	0.25	70.72	0.10	0.44	0.04	3.35
	WX	3.04	3.99	135.56	45.19	3.56	177.96	2.38	1.00	0.39	9.57
Colon	K	1.33	1.02	18.93	2.97	0.66	103.34	0.04	0.13	0.03	79.54
	W	1.41	1.29	30.18	4.83	1.49	94.79	0.92	0.24	0.05	83.70
	KX	1.56	0.63	19.17	3.53	0.88	88.21	0.06	0.32	0.05	70.92
	WX	5.50	11.55	176.66	49.93	20.39	209.28	11.82	1.76	0.27	200.76

Organ	Group	<i>D630023F18Rik</i>	<i>Lif</i>	<i>Mgmt</i>	<i>Plcd4</i>
Liver	K	0.02	0.01	13.18	0.00
	W	0.00	0.00	19.86	0.00
	KX	0.00	0.00	16.87	0.00
	WX	0.03	0.10	32.09	0.00
Bladder	K	0.77	3.11	5.13	0.04
	W	1.34	1.33	7.20	0.24
	KX	0.73	1.62	4.77	0.13
	WX	1.23	3.24	21.00	0.95
Esophagus	K	0.16	0.23	5.15	2.26
	W	0.14	0.22	5.96	2.67
	KX	0.08	0.26	4.73	1.97
	WX	0.79	0.94	17.09	3.51
Stomach	K	0.09	0.26	11.78	0.05

	W	0.05	0.29	10.76	0.06
	KX	0.11	0.30	9.79	0.07
	WX	0.12	0.99	23.90	0.86
Colon	K	0.06	0.85	1.95	0.28
	W	0.05	0.81	3.87	0.13
	KX	0.07	1.05	2.48	0.12
	WX	0.07	4.07	22.74	2.60

Organ	Group	<i>Fam212b</i>	<i>4632434I11Rik</i>	<i>Celf5</i>	<i>9030617O03Rik</i>	<i>Cd80</i>	<i>Sesn2</i>	<i>Zfp365</i>	<i>1700007K13Rik</i>
Small intestine	K	0.61	1.20	1.15	17.65	0.49	2.45	0.10	0.05
	W	0.62	1.16	1.23	18.20	0.60	2.26	0.11	0.05
	KX	0.68	1.45	0.78	14.77	0.40	2.40	0.12	0.00
	WX	3.31	4.21	0.72	29.12	1.82	9.04	0.98	1.77
Testis	K	0.10	25.43	8.97	0.30	0.07	6.79	0.02	35.63
	W	0.19	24.86	9.65	0.29	0.08	6.43	0.02	35.42
	KX	0.10	25.65	8.07	0.38	0.05	7.51	0.03	41.84
	WX	0.27	23.68	9.57	1.66	0.07	8.62	0.15	37.13
Epididymis	K	1.02	0.40	0.06	1.94	0.35	9.06	0.59	0.89
	W	1.35	0.73	0.08	3.55	0.31	9.59	0.79	0.59
	KX	1.41	0.58	0.10	2.19	0.41	7.99	0.99	0.73
	WX	2.94	1.89	0.51	10.81	1.10	15.42	1.53	2.92

Seminal vesicle	K	1.54	0.19	0.04	2.98	0.15	5.64	0.24	0.07
	W	1.50	0.12	0.10	3.50	0.12	3.15	0.14	0.08
	KX	1.62	0.28	0.02	2.62	0.16	7.78	0.10	0.07
	WX	7.44	2.75	0.76	23.19	0.57	14.65	0.92	3.26
Muscle	K	1.32	0.03	0.04	6.00	0.12	0.82	0.13	0.10
	W	1.33	0.02	0.02	4.54	0.14	0.84	0.12	0.00
	KX	1.38	0.02	0.05	6.55	0.08	0.91	0.13	0.06
	WX	2.17	0.85	0.34	13.74	0.47	2.83	0.65	0.25

Organ	Group	<i>Bbc3</i>	<i>Psrl1</i>	<i>Ccng1</i>	<i>Phlda3</i>	<i>Gdf15</i>	<i>Cdkn1a</i>	<i>Eda2r</i>	<i>A930001C03Rik</i>	<i>Gm16197</i>	<i>Ces2e</i>
Small intestine	K	0.57	0.73	10.74	1.28	0.22	124.78	0.02	0.45	0.02	441.31
	W	0.68	1.12	14.91	1.84	0.29	105.79	0.19	0.68	0.02	377.40
	KX	0.74	0.58	10.16	1.45	0.52	121.67	0.02	0.47	0.05	415.74
	WX	3.28	14.28	85.91	22.45	5.68	182.73	3.96	1.33	0.16	500.05
Testis	K	0.86	0.10	1.41	0.61	0.18	3.23	0.03	0.26	0.14	0.13
	W	1.00	0.17	1.88	0.84	0.24	3.54	0.07	0.36	0.21	0.11
	KX	0.82	0.12	1.51	0.70	0.24	3.47	0.03	0.27	0.17	0.06
	WX	1.38	0.25	5.18	2.36	0.39	6.48	0.55	0.19	0.41	0.27
Epididymis	K	0.64	0.23	20.31	15.92	1.40	17.51	0.35	0.38	0.02	2.45
	W	0.65	0.50	35.66	19.25	2.40	22.35	0.40	0.75	0.05	2.83
	KX	0.66	0.34	23.94	16.31	1.39	16.36	0.37	0.22	0.00	2.64

	WX	2.43	1.76	82.31	31.38	5.09	58.62	2.68	1.97	0.69	7.19
Seminal vesicle	K	1.58	0.94	17.87	7.98	0.33	0.40	0.28	0.00	0.00	1.23
	W	2.04	0.88	21.67	7.29	0.33	1.06	0.39	0.00	0.00	1.29
	KX	1.93	0.77	16.76	7.65	0.43	0.53	0.18	0.06	0.00	1.73
	WX	6.75	7.71	122.09	36.64	15.19	39.56	10.85	0.62	0.20	10.79
Muscle	K	0.35	0.06	232.46	101.62	0.03	8.02	1.85	0.00	0.09	0.02
	W	0.35	0.10	233.56	92.77	0.03	4.29	1.52	0.00	0.08	0.05
	KX	0.39	0.04	239.39	103.22	0.00	10.32	1.44	0.00	0.08	0.03
	WX	1.21	0.44	342.65	125.37	2.15	86.37	6.70	0.09	0.25	0.36

Organ	Group	<i>D630023F18Rik</i>	<i>Lif</i>	<i>Mgmt</i>	<i>Plcd4</i>
Small intestine	K	0.03	1.65	0.98	0.03
	W	0.10	1.51	1.31	0.05
	KX	0.07	1.77	0.89	0.01
	WX	0.12	2.91	7.97	0.21
Testis	K	0.00	0.08	1.50	55.49
	W	0.00	0.09	1.57	56.44
	KX	0.01	0.07	1.22	56.27
	WX	0.02	0.10	3.09	59.66
Epididymis	K	0.00	0.71	2.71	0.72
	W	0.03	0.52	3.68	1.93

	KX	0.00	0.68	2.56	1.09
	WX	0.19	1.02	16.86	2.01
Seminal vesicle	K	0.00	0.10	0.62	0.02
	W	0.00	0.09	0.62	0.04
	KX	0.00	0.07	0.53	0.04
	WX	0.28	0.72	7.09	0.74
Muscle	K	0.00	0.09	4.41	26.21
	W	0.00	0.14	4.62	52.89
	KX	0.00	0.11	4.99	53.06
	WX	0.00	0.18	8.98	51.70

Organ	Group	<i>Fam212b</i>	<i>4632434I11Rik</i>	<i>Celf5</i>	<i>9030617O03Rik</i>	<i>Cd80</i>	<i>Sesn2</i>	<i>Zfp365</i>	<i>1700007K13Rik</i>
Bone marrow	K	0.10	5.35	0.01	4.07	1.63	5.88	0.03	0.00
	W	0.20	5.78	0.01	4.79	1.85	6.34	0.04	0.00
	KX	0.15	4.49	0.04	5.54	2.95	7.00	0.08	0.00
	WX	2.07	7.85	0.11	17.95	13.34	20.61	1.25	0.47
Tongue	K	5.10	0.28	0.15	8.55	0.23	1.07	0.66	0.83
	W	5.29	0.37	0.15	9.13	0.21	1.33	0.81	1.06
	KX	3.92	0.50	0.17	10.57	0.28	1.37	0.74	0.72
	WX	6.68	1.40	0.95	13.45	1.15	6.07	2.27	2.26
Eyeball	K	9.27	0.47	6.70	1.72	0.16	3.54	28.55	0.79

	W	9.19	0.58	6.24	1.92	0.24	4.37	26.51	1.33
	KX	9.15	0.61	6.61	1.76	0.19	4.15	28.15	1.29
	WX	14.22	1.40	7.26	4.37	0.17	6.77	29.06	2.10
Cerebrum	K	15.97	0.06	43.32	2.94	0.12	4.33	64.34	2.34
	W	12.96	0.11	39.47	2.15	0.06	3.84	72.16	1.90
	KX	15.82	0.14	35.71	2.68	0.20	3.44	67.09	1.88
	WX	17.94	0.44	42.69	4.32	0.37	5.68	75.26	3.87
Uterus	K	4.12	0.60	0.23	3.34	0.65	2.97	0.39	0.15
	W	1.81	1.87	0.14	4.72	0.60	3.42	0.35	0.26
	KX	5.61	0.87	0.26	3.66	0.65	4.36	0.53	0.16
	WX	5.96	3.32	3.64	24.90	2.62	20.62	2.11	6.54

Organ	Group	<i>Bbc3</i>	<i>Psrl1</i>	<i>Ccng1</i>	<i>Phlda3</i>	<i>Gdf15</i>	<i>Cdkn1a</i>	<i>Eda2r</i>	<i>A930001C03Rik</i>	<i>Gm16197</i>	<i>Ces2e</i>
Bone marrow	K	2.83	6.91	14.61	0.71	0.79	4.16	0.00	0.00	0.06	0.10
	W	3.23	8.32	18.86	0.74	1.22	5.12	0.03	0.00	0.08	0.13
	KX	3.31	8.28	19.12	0.90	1.73	7.42	0.00	0.00	0.09	0.26
	WX	12.03	14.02	144.99	30.18	21.98	127.02	2.19	0.16	1.95	1.92
Tongue	K	0.88	1.07	95.42	98.91	0.29	100.53	1.62	0.16	0.25	1.60
	W	0.81	1.28	92.18	100.68	0.24	97.08	1.65	0.08	0.25	1.48
	KX	0.77	1.14	93.16	101.01	0.32	82.91	1.53	0.18	0.17	1.08
	WX	2.76	5.49	128.24	125.84	1.98	193.21	5.01	0.60	0.22	5.76

Eyeball	K	1.15	0.62	36.90	8.74	0.20	8.31	0.15	0.21	0.08	0.88
	W	0.98	0.72	39.16	10.65	0.29	10.30	0.11	0.09	0.11	1.27
	KX	1.02	0.71	35.55	9.08	0.18	9.35	0.05	0.09	0.07	1.09
	WX	1.94	1.46	74.66	21.80	2.30	37.07	1.22	0.52	0.22	3.37
Cerebrum	K	2.08	2.03	7.74	13.42	0.00	8.35	0.01	0.29	0.12	0.04
	W	2.24	1.83	16.23	11.71	0.03	5.87	0.10	0.34	0.14	0.05
	KX	1.82	1.64	16.70	12.80	0.00	9.33	0.03	0.25	0.10	0.01
	WX	2.36	3.79	43.34	24.67	0.28	43.04	2.06	0.26	0.40	0.11
Uterus	K	2.48	1.44	15.03	11.34	0.35	5.80	2.12	0.10	0.04	1.15
	W	1.56	2.57	25.32	15.61	0.42	14.28	0.65	0.11	0.06	1.25
	KX	4.51	2.37	15.96	18.84	0.27	2.31	3.84	0.10	0.05	0.77
	WX	18.76	21.63	132.73	91.43	7.03	235.28	16.21	1.73	1.86	6.30

Organ	Group	<i>D630023F18Rik</i>	<i>Lif</i>	<i>Mgmt</i>	<i>Plcd4</i>
Bone marrow	K	0.09	0.03	6.16	0.00
	W	0.04	0.02	6.71	0.00
	KX	0.11	0.06	8.55	0.00
	WX	1.53	0.36	26.00	0.02
Tongue	K	0.05	0.26	3.28	3.60
	W	0.06	0.17	4.26	4.64
	KX	0.05	0.18	3.42	4.58

	WX	0.22	0.55	10.47	4.74
Eyeball	K	0.32	0.25	3.58	1.38
	W	0.48	0.20	3.87	1.22
	KX	0.51	0.25	3.09	1.21
	WX	0.42	0.41	7.68	1.56
Cerebrum	K	1.05	0.13	0.87	6.93
	W	1.19	0.13	1.55	6.20
	KX	1.10	0.09	0.65	7.02
	WX	1.11	0.23	2.61	8.03
Uterus	K	0.02	1.51	5.28	0.09
	W	0.00	5.76	4.23	0.09
	KX	0.04	1.60	5.81	0.10
	WX	0.13	5.13	18.75	3.33

Organ	Group	<i>Fam212b</i>	<i>4632434I11Rik</i>	<i>Celf5</i>	<i>9030617O03Rik</i>	<i>Cd80</i>	<i>Sesn2</i>	<i>Zfp365</i>	<i>1700007K13Rik</i>
Skull/calvaria	K	1.22	0.80	1.14	2.68	0.41	3.62	1.55	0.23
	W	1.46	0.93	1.68	3.29	0.51	4.21	1.91	0.29
	KX	0.53	1.23	0.94	2.76	0.64	3.66	1.72	0.05
	WX	8.10	2.43	5.47	11.29	2.00	17.52	5.47	3.76
Cartilage/knee	K	4.24	0.81	0.23	1.31	0.39	2.24	1.29	0.14
	W	3.91	0.80	0.34	1.71	0.47	2.84	1.24	0.14

	KX	4.68	1.02	0.32	1.52	0.40	2.38	1.36	0.14
	WX	8.15	2.45	1.70	5.57	2.22	9.67	3.38	1.77
Ovary	K	0.42	1.72	0.06	2.57	0.32	3.48	0.29	4.58
	W	0.76	1.72	0.15	5.08	0.50	5.17	0.47	11.43
	KX	0.58	2.61	0.07	2.13	0.59	4.30	0.17	5.30
	WX	9.69	5.90	2.22	28.98	1.62	21.97	4.01	13.52
Mammary gland	K	1.10	0.32	0.11	9.84	1.70	5.05	0.38	0.11
	W	1.17	0.43	0.11	9.46	1.87	4.11	0.42	0.19
	KX	1.20	0.31	0.09	10.58	1.52	5.62	0.43	0.09
	WX	6.06	2.31	1.75	32.54	4.89	16.19	2.30	3.85

Organ	Group	<i>Bbc3</i>	<i>Psrl</i>	<i>Cngl</i>	<i>Phlda3</i>	<i>Gdf15</i>	<i>Cdkn1a</i>	<i>Eda2r</i>	<i>A930001C03Rik</i>	<i>Gm16197</i>	<i>Ces2e</i>
Skull /calvaria	K	4.87	4.77	15.05	19.29	0.49	64.30	0.22	0.24	0.10	0.54
	W	5.52	5.53	17.13	23.24	0.25	74.00	0.25	0.27	0.10	0.63
	KX	4.86	7.09	14.88	18.02	0.27	66.17	0.13	0.29	0.07	0.63
	WX	16.85	29.63	75.24	90.31	3.07	343.52	5.71	0.94	0.51	2.25
Cartilage /knee	K	3.63	4.49	28.12	18.75	0.34	45.63	0.59	0.11	0.16	0.21
	W	3.80	4.71	28.28	18.42	0.34	57.36	0.76	0.16	0.21	0.29
	KX	3.02	7.90	30.50	17.33	0.19	39.31	0.49	0.22	0.15	0.25
	WX	9.50	15.61	80.32	64.90	1.43	222.81	4.00	1.15	0.94	1.96

Ovary	K	2.12	9.16	11.06	12.74	1.58	3.42	0.50	0.15	0.03	2.16
	W	3.55	7.41	21.39	18.85	1.68	23.22	1.96	0.33	0.18	2.03
	KX	1.96	9.12	10.93	11.73	2.64	8.60	0.55	0.13	0.03	3.20
	WX	18.00	34.98	117.41	93.50	17.38	306.16	16.64	1.46	1.44	8.75
Mammary gland	K	6.71	1.01	22.40	88.46	0.72	6.69	0.21	0.18	0.02	1.15
	W	9.16	1.49	26.89	91.55	0.92	12.21	0.35	0.11	0.09	1.80
	KX	6.20	1.03	22.10	115.62	1.31	13.60	0.10	0.11	0.05	0.71
	WX	15.34	22.25	101.71	177.02	19.62	211.20	6.56	1.34	1.08	7.18

Organ	Group	<i>D630023F18Rik</i>	<i>Lif</i>	<i>Mgmt</i>	<i>Plcd4</i>
Skull/calvaria	K	0.00	2.54	6.37	0.54
	W	0.01	2.99	6.28	0.26
	KX	0.00	3.39	6.86	0.04
	WX	0.33	4.26	19.86	0.68
Cartilage/knee	K	0.01	0.61	4.53	1.70
	W	0.02	0.68	4.88	2.10
	KX	0.00	0.60	4.88	2.31
	WX	0.08	0.79	12.34	5.12
Ovary	K	9.36	0.23	17.05	2.88
	W	17.71	0.33	19.37	0.04
	KX	5.98	0.28	12.01	0.08

	WX	21.04	1.93	54.05	0.91
Mammary gland	K	0.02	0.67	7.10	1.19
	W	0.04	0.60	7.90	0.11
	KX	0.01	0.60	10.09	0.08
	WX	0.65	2.26	38.93	0.12

W, *p53* wild-type; K, *p53* knockout; KX, *p53* knockout irradiated; WX, *p53* wild-type irradiated.

Table SVI. Genomic locations of p53 ChIP-seq peaks from ReMap 2018 database and *INKA2/FAM212B* binding site and promoter region.

Cell type	p53 status	Biological condition	Start position	End position	Peak length (bp)	PMID	GSE ID
U2OS	Wild-type	UV	111,738,507 111,738,540	111,738,718 111,738,746	211 206	24289924	ERP004176
IMR-90	Wild-type	5-FU	111,738,530	111,738,787	257	22127205	GSE31558
hESCs	Wild-type	ADR	111,738,291	111,738,744	214	24078252	GSE39912
U2OS	Wild-type	ADR, Nutlin-3a	111,738,077 111,738,473	111,738,840 111,738,811	763 338	23775793	GSE46641
GM00011, GM06170	Wild-type	ADR	111,738,308 111,738,378	111,738,668 111,738,701	360 323	25883152	GSE55727
HFK	Wild-type	ADR, cisplatin	111,738,438 111,738,457 111,738,493	111,738,844 111,738,723 111,738,711	406 266 218	24823795	GSE56674
HCT 116	Wild-type	5-FU	111,738,495	111,738,787	292	25524025	GSE58506
IMR-90	Wild-type	Nutlin-3a	111,738,375	111,739,417	1042	25391375	GSE58740
HCT 116	Wild-type	Ionizing radiations	111,738,328	111,738,862	534	25996291	GSE60267
p53 binding site identified in <i>INKA2</i>			111,738,593	111,738,611	18		
Promoter region of <i>INKA2</i> isoform 1			111,739,153	111,740,697	1544		
Promoter region of <i>INKA2</i> isoform 2			111,755,697	111,756,824	1127		

hESCs, human embryonic stem cells; HFK, human foreskin keratinocytes; 5-FU, 5-fluorouracil; ADR, adriamycin.

Table SVII. Genomic locations of p53 ChIP-seq peaks from ChIPBase database and *Inka2/Fam212b* binding site and promoter region.

Cell type	p53 status	Biological condition	Start position	End position	Peak length (bp)	PMID	GSE ID
MEF	Wild-type	ADR	105,704,618	105,705,708	1090	25883152	GSE55727
		p53 binding site identified in <i>Inka2</i>	105,705,367	105,705,385	18		
		Promoter region of <i>Inka2</i> isoform 1	105,703,598	105,704,767	1169		
		Promoter region of <i>Inka2</i> isoform 2	105,703,921	105,705,558	1637		

MEF, mouse embryonic fibroblasts; ADR, adriamycin.